

REMARKS

Applicants' Agent wishes to thank the Examiner for examining the above-identified Application. Claims 1-19 and 39-41 are pending in the Application. Claims 1-19 and 39-41 have been rejected.

This response fully addresses each and every issue raised in the Office Action dated September 10, 2001. A detailed discussion of each issue is provided in the sections which follow.

The Examiner's 35 USC § 103 Objection

Claims 1-19 and 39-41 have been rejected under 35 U.S.C. 103 as being unpatentable over Wang, et al. (5849405) in view of Mukaida, et al. (EP 612533), Minto, et al. (EP 156160), Early, et al. (4468428), and Anjur, et al. (5645542), as set forth in the previous Office Action. The Examiner has reiterated the contention that it would have been obvious to one having skill in the art at the time the invention was made to utilize microfibers to bind an absorbent gelling particle to a carrier layer. Applicants respectfully traverse this rejection. Specifically, the Applicants contend that the Examiner has failed to establish a prima facie case of obviousness because, among other factors, Wang, the Examiner's primary citation fails to teach the adherence of microfibers in a carrier level in the dry state, as required by the instant claims, as amended.

Applicants' have stated that the essential question in determining whether the instant technology is obvious in light of the citations is: would the use of a resin powder as "glue" make obvious the use of the "glue microfibers". The Examiner has countered that the essential question is "would the teaching of glues and binders render obvious the use of microfibers". The Examiner's answer to this question is "yes". However, Applicant contends that the answer to this question is also "no". The instant "glue microfibers" were chosen because of their ability to provide multiple functions, which would not be provided by prior art "glues and binders". Additionally, there is no teaching at all in Wang of the value of glues and binders in achieving the cited products. As the title indicates, the goal of the instant application is the production of materials with improved structural stability in dry and wet states. In the "fluid stable aggregates" of Wang the bonds are created after wetting not in the dry state. Neither the composition nor the physical properties of the glues and binders of Wang (which, in addition to not being

microfibers, are merely part of a list of additive types which also include powdered silica and surfactants) are specified.

It is the longer shape of the instant meltblown "glue microfibers" which would result in a larger surface (of the microfiber itself) being adhered to the carrier layer. The use of the "glue microfibers" as both 1) glue to maintain placement of the absorbent gelling particles and 2) as a structural element to provide stability, is not contemplated by either reference nor, if one were to combine the cited references, would such a structure be created.

The Examiner previously stated that it is extremely common and well known in the art to utilize microfibers as binders. In support of this position, the Examiner cites Minto and Early.

Minto

Minto describes a method of making a non-woven web of meltblown polymeric fibres wherein the meltblown fibers have absorbent particles introduced into the stream of microfibrils after the microfibrils have been extruded. The absorbent particles are directed into the stream of microfibrils whilst the fibres are in a tacky state so that the particles adhere to the fibres.

As previously pointed out, The microfibrils of Minto do have absorbent particles adhered to them while the microfibrils are in a tacky state, however, the cited microfibrils are then formed into a non-woven web. The Minto web has a relatively small amount of absorbent particles in relation to the amount of microfibrils. The absorbent particles of Minto are selected from clay, kaolin, talc, calcium carbonate, sodium sulphate, sodium carbonate, aluminum oxide or "organic materials such as sponge particles (see bottom of page 3 and top of page 4). There is no contemplation of the "gel-blocking" phenomena which prevents optimum absorption if the water absorbent hydrogel-forming polymers are not separated from one another during absorbency. Nor are, the glue microfibrils of the instant application formed into a web. The instant articles utilize only enough microfibers to adhere the water absorbent hydrogel-forming polymers to the carrier layer. The cited article, on the other hand, is a web made from microfibers. There is neither teaching of

using microfibers to adhere to a carrier nor any motivation to eliminate two problems with one solution.

It is common knowledge in the art that many melt blown polymeric fibres are tacky during manufacture. Due to this tackiness, the microfibers of Minto, capture the absorbent particles as they are blown through, however, the Minto microfibres do not serve to adhere the particles to another substrate. Additionally, the "absorbent particles" of the citation have a diameter of 1 micron or less up to 100 microns, while the absorbent material of the instant application (see example at page 20) typically has a particle size distribution ranging from 300 microns to 600 microns (see page 4, lines 9-11). The citation, therefore, teaches away from utilizing the instant gelling materials with their much larger particle size.

The essence of the instant invention is not merely the use of microfibers as glue to adhere water absorbent hydrogel forming polymers but rather that these microfibers perform a dual function, i.e., they not only keep the absorbent gelling particles from shifting position, but they also add stability to the article, this makes them uniquely valuable for this application. There is nothing in Minto which would lead one of skill in the art to the instant structures.

Early

The Early citation discloses fibrous absorbent webs having a low density (about 0.01 g/cm^3 to about 0.15 g/cm^3), and comprising at least about 50% microfibers, such as cellulose microfibers. While most of the Early microfibers are cellulose, thermoplastic microfibers are contemplated. Additionally, the Early disclosure states "Web strength of the web may be increased by heat fusion, whereby the web is heated to a temperature at which the fibers become soft." There is, however, no contemplation in Early of attaching any kind of particle to the microfibers. Applicant is not claiming to have disclosed first use of thermoplastic microfibers in absorbent articles. Applicant discloses that specific types of glue microfibers, when used to adhere absorbent gelling materials to a carrier layer promote both a reduction in gel blocking and an increase in structural stability. Please also note that Early requires 50% of the web to be comprised of microfibers while the characteristics achieved by the instant configuration are obtained when the microfibers

are present at from 1% to 10%. There is nothing in Early which would suggest to the skilled reader adhering absorbent gelling materials to a carrier layer via a tacky microfiber.

Wang

Regarding Wang, the Examiner states: "However, Wang specifically teaches that said water-swellaible polymer should be mixed with glues or binders, and that said polymer should not be readily physically separatable from said glues and binder (col. 13, lines 30-37)".

A closer look at column 13 of the Wang reference shows that it states: " The hydrogel-forming absorbent polymers can also comprise mixtures with low levels of one or more additives, such as for, example powdered silica, surfactants, glue, binders, and the like. The components **in this mixture** can be physically and/or chemically associated in a form such that the **hydrogel-forming polymer component and the non-hydrogel forming polymer additive are not readily physically separable.**"(Emphasis mine). As pointed out in the attached Declaration of Ebrahim Rezai, the hydrogel-forming polymer and the non-hydrogel-forming polymer additive are made "not readily physically separatable" by an interaction which occurs after wetting, not during the dry state. Therefore no provision is made to prevent the hydrogel-forming polymer from changing its location in the article during storage. If the "glues and binders" referred to by that portion of the reference do attach the hydrogel-forming component to the "absorbent property modification polymer", the properties required by such "glues and binders" are not the same as those of the instant application.

As Applicants have pointed out, the MPEP 2143 states, "To establish a prima facie case of obviousness, three basic criteria are to be met. First there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally the prior art reference (or references when combined) must teach or suggest all the claim limitations." Applicant asserts that these criteria are not met by the references combined by the Examiner.

The Examiner admits that if "one of skill in the art were to attempt to reduce the teachings of Wang to practice she would be confronted with a gap in the disclosure of Wang. Specifically, Wang never teaches the particular forms said glues and binders should be used in....The prior art teaches the use of microfibers as binders for the reasons set forth above."

The abstract of Wang states: " When a urine is applied to the absorbent material, the absorbent gelling particles are spontaneously connective through the absorbent property modification polymer. The absorbent material has at least one of the improved absorbent properties **after swelling** such as (1) liquid permeability, (2) porosity, (3) wet integrity, and (4) recovery property when subjected to external forces." (Emphasis mine) It is the intent of the instant invention that its absorbent article have improved structural stability in the wet and the dry states, so that not only is there wet integrity but also an inhibition of the shifting of absorbent gelling particles (hydrogel-forming polymer) during the shipping and storage which occur prior to use. There is no provision in Wang for such an inhibition, nor is there anything in Wang which would lead one of skill in the art to the instant structures.

The Federal Circuit in *In re Fritch* 972 F2d 1260, 23 USPQ2d 1780 (Fed.Cir. 1992) noted that "it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art, so that the claimed invention is rendered obvious....This court has previously stated that [o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." Applicant respectfully suggests that the Examiner is, in this case, using hindsight reconstruction and, following a reading of the instant specification, has chosen five references which disclose various isolated elements of the instant invention to render the instant application obvious.

CONCLUSION

For the foregoing reasons, Applicants respectfully submit that this applied reference combination does not render Claims 1-19 and 39-41 unpatentably obvious under 35 U.S.C. 103. The rejection of these claims should be withdrawn. Accordingly,

favorable reconsideration of Claims 1-19 and 39-41 is earnestly solicited in the form of a Notice of Allowance.

Should any issues regarding this Application remain unresolved, the Examiner is encouraged to contact the undersigned by telephone at the earliest possible date to achieve a timely resolution.

Respectfully submitted

FOR: REZAI ET AL.

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Version with markings to show changes made

2. An absorbent material comprising:
- (a) absorbent gelling particles comprising a water-insoluble absorbent hydrogel forming polymer;
 - (b) a polycationic polymer;
 - (c) from about 1 % to about 10% of glue microfibers selected from the group consisting of:
 - i) tackifier modified polymers,
 - ii) pressure sensitive adhesives, and
 - iii) mixtures thereof;
 - (d) a carrier layer;
- wherein the polycationic polymer is bonded to the absorbent gelling particles; and wherein the absorbent gelling particles, deposited onto the carrier layer, are fixed to the surface of the carrier layer by the glue microfibers in the dry state and wherein the glue microfibers are meltblown fibers.